

Ser. No. 09/876,151

Docket No. 1567.1009

REMARKS

INTRODUCTION:

Claims 10, 8-9, 11-12 and 16-17 were allowed.

Claims 2-3 and 20 were objected to as being dependent upon a rejected base claim, but would be allowed if suitably amended.

Claim 18 was rejected as being no more limiting than claim 17.

Claims 5, 6, 13-15, and 19 were rejected as anticipated by or, in the alternative, obvious in view of, Yang et al. (USPN 6,350,543).

These rejections are respectfully traversed and reconsideration is requested.

In accordance with the foregoing, claims 18 and 20 been canceled without prejudice or disclaimer, and claims 5 and 19 have been amended.

No new matter is being presented, and approval and entry of the foregoing amendments are respectfully requested.

Claims 2, 3, 5, 6, 8-17 and 19 are pending and under consideration. Reconsideration is requested.

REJECTION UNDER 35 U.S.C. §112:

In the Office Action on page 2, the Examiner rejected claim 18 under 35 U.S.C. §112, second paragraph, for the reasons set forth therein.

Claim 18 appears to be redundant. Thus, claim 18 has been deleted, and this rejection is now moot.

REJECTION UNDER 35 U.S.C. §102/103:

In the Office Action on page 2, the Examiner rejected claims 5, 6, 13-15 and 19 under 35 U.S.C. §102, or in the alternative under 35 U.S.C. §103, in view of Yang et al. (USPN 6,350,543; hereafter referenced as Yang et al.). This rejection is respectfully traversed and reconsideration is requested.

Claim 5 has been amended for clarity. Dependent claims 6 and 13-15 depend from amended claim 5 and are deemed to be allowable for at least the reasons that amended claim 5 is allowable (see below). Claim 20 has been added to claim 19 to provide amended claim 19, which is deemed to be allowable pursuant to paragraph 8 of page 4 of the Office Action.

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It is respectfully submitted that the lithium negative electrode of the present invention is substantially different from the lithium anode taught by Yang et al. In col. 13, lines 50-60, Yang et al. state "Negative electrodes (or anodes) for use in the current invention include lithium metal and lithium intercalation compounds. A particular anode useful in the present invention is thin lithium foil, commercially available from Aldrich, Fisher and Strem. A lithium intercalation compound for use in an anode may be one of the following materials: natural graphite, synthetic graphite, non-graphic carbon materials, and lithium tin oxides. Such intercalation compounds are typically pure natural or synthetic graphites that can be purchased from various commercial sources such as Aldrich."

Hence, Yang et al. teaches that thin lithium foil is particularly useful as an anode. However, as is known to those skilled in the art, lithium metal is soft, has poor mechanical strength, and the lithium foil is difficult to adhere to a current collector. In addition, lithium reacts violently with moisture, as well as nitrogen, in the air. Yang et al. fails to teach using the lithium metal in an inert gas atmosphere to avoid reaction with moisture and nitrogen in the air that may cause an explosion. In contrast, the present invention teaches melting the lithium metal under an inert gas atmosphere and coating the liquid metal uniformly on a metal current collector to form the anode, thus avoiding reaction of the lithium metal with moisture and nitrogen in the air so that an explosion is avoided. Thus, it is respectfully submitted that amended claim 5 is not anticipated by Yang et al. under 35 U.S.C. § 102.

The genius of invention is often a combination of known elements which in hindsight seems preordained. When the art in question is relatively simple, the opportunity to judge by hindsight is particularly tempting. Consequently, the courts have advised that one needs to guard against falling victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher. In determining obviousness, the invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. See W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1551, 220 USPQ 303, 312-13 (Fed. Cir. 1983); see also Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 87, 101 (Fed. Cir. 1983). The courts have held that it is impermissible to use hindsight to determine obviousness, e.g., using the inventors' success as evidence that the success would have been expected. See In re Kotzab, 217 F.3d 1365, 1369, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (noting the importance of casting the mind back to the time of the invention to avoid the "insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher").

The Examiner does not recite any suggestion of a teaching of melting lithium metal under an inert gas atmosphere and coating the liquid lithium metal uniformly on a metal current collector.

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It is respectfully submitted that the courts have held that the Examiner may not suggest modifying references using the present invention as a template absent a suggestion of the desirability of the modification in the prior art. In re Fitch, 23 U.S.P.Q.2d 1780, Fed Cir. 1992. Thus, it is respectfully submitted that that amended claims 5 and 19 are not obvious in view of Yang et al. under 35 U.S.C. § 103.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, it is respectfully submitted that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any additional fees associated with the filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,
STAAS & HALSEY LLP

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